Claim Amendments:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A single crystal spinel boule formed by melt processing, the boule having a non-stoichiometric composition ~~and having a reduced mechanical stress or strain represented by a yield rate not less than about 20%, wherein yield rate is $w_i/(w_i + w_f)$ x 100%, w_i = the number of intact wafers processed from said boule, and w_f = the number of fractured wafers from said boule due to internal mechanical stress or strain in the boule~~ represented by the general formula $aAD \cdot bE_2D_3$, wherein A is selected from the group consisting of Mg, Ca, Zn, Mn, Ba, Sr, Cd, Fe, and combinations thereof, E is selected from the group consisting Al, In, Cr, Sc, Lu, Fe, and combinations thereof, and D is selected from the group consisting O, S, Se, and combinations thereof, wherein a ratio b:a > 2.5:1 such that the spinel is rich in E_2D_3.

2. (Currently Amended) The boule of claim 1, having a reduced mechanical stress or strain represented by a yield rate not less than about 20%, wherein yield rate is $w_i/(w_i + w_f)$ x 100%, w_i = the number of intact wafers processed from said boule, and w_f = the number of fractured wafers from said boule due to internal mechanical stress or strain in the boule~~wherein the yield rate is not less than about 25%~~.

3. (Currently Amended) The boule of claim ~~1~~2, wherein the yield rate is not less than about 30%.

4. (Currently Amended) The boule of claim ~~1~~3, wherein the yield rate is not less than about 40%.

5. (Currently Amended) A single crystal spinel wafer formed by melt processing, the wafer having a non-stoichiometric composition ~~and having a reduced internal stress or strain represented by a yield rate not less than about 20%, wherein yield rate is $w_i/(w_i + w_f)$ x 100%, w_i = the number of intact wafers processed from the boule, and w_f = the number of fractured wafers~~

~~from the boule due to mechanical stress or strain in the boule~~represented by the general formula $aAD{\cdot}bE_2D_3$, wherein A is selected from the group consisting of Mg, Ca, Zn, Mn, Ba, Sr, Cd, Fe, and combinations thereof, E is selected from the group consisting Al, In, Cr, Sc, Lu, Fe, and combinations thereof, and D is selected from the group consisting O, S, Se, and combinations thereof, wherein a ratio b:a $\geq$ 2.5:1 such that the spinel is rich in E_2D_3.

6. (Original) The single crystal spinel wafer of claim 5, wherein the wafer has a diameter of not less than about 1.75 inches.

7. (Original) The single crystal spinel wafer of claim 5, wherein the wafer has a diameter of not less than about 2.0 inches.

8. (Original) The single crystal spinel wafer of claim 5, wherein the wafer has a diameter of not less than about 2.5 inches.

9. (Original) The single crystal spinel wafer of claim 5, wherein the boule consists essentially of a single spinel phase, with substantially no secondary phases.

10. (Canceled)

11. (Currently Amended) The single crystal spinel wafer of claim ~~10~~5, wherein A is Mg, D is O, and E is Al, such that the single crystal spinel has the formula $aMgO{\bullet}bAl_2O_3$.

12. (Currently Amended) The single crystal spinel wafer of claim ~~10~~5, wherein the ratio b:a is ~~not less than~~ about ~~1.2:1~~3:1.

13. (Currently Amended) The single crystal spinel wafer of claim ~~10~~5, wherein the ratio b:a is ~~not less than~~ about 2.9~~1.5~~:1.

14. (Currently Amended) The single crystal spinel wafer of claim ~~10~~5, ~~wherein the ratio b:a is not less than about 2.0:1~~wherein the wafer has a reduced internal stress or strain represented by a yield rate not less than about 20%, wherein yield rate is $w_i/(w_i + w_f) \times 100\%$, w_i

= the number of intact wafers processed from a boule, and w_f = the number of fractured wafers from the boule due to mechanical stress or strain in the boule.

15. (Canceled).

16. (Currently Amended) The single crystal spinel wafer of claim ~~10~~5, wherein the ratio b:a is not greater than about 4:1.

17. (Currently Amended) The single crystal spinel wafer of claim ~~10~~5, wherein the wafer has a lower mechanical stress and strain compared to stoichiometric spinel.

18. (Currently Amended) An optoelectronic substrate, consisting essentially of $aMgO \cdot bAl_2O_3$ single crystal spinel, wherein a ratio b:a > 2.5~~1~~:1 such that the spinel is rich in Al_2O_3, and the single crystal spinel is formed by a melt process.

19. (Original) The substrate of claim 18, wherein the substrate comprises a wafer.

20. (Original) The substrate of claim 18, wherein the substrate comprises a die formed from a wafer.

21. (Original) The substrate of claim 20, wherein the die is cleaved from the wafer.

22. (Original) The substrate of claim 18, wherein the substrate has a surface suitable for epitaxial growth of an active layer thereon.

23-29. (Canceled).